

AMENDMENTS TO THE CLAIMS

Listing of claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Claims 1-4 (Canceled)

Claim 5 (Currently Amended) A semiconductor device comprising:

a single-crystal silicon substrate;

a first single-crystal oxide thin film having a sodium chloride structure formed ~~through epitaxial growth~~ on the single-crystal silicon substrate in an epitaxial relationship therewith; and

a second single-crystal oxide thin film having a perovskite structure formed ~~through epitaxial growth~~ on the first single-crystal oxide thin film in an epitaxial relationship therewith,

said first single-crystal oxide thin film being selected from the group consisting of CaO, SrO, and BaO.

Claims 6-7 (Canceled)

Amendment
Serial No. 10/755,448
Attorney Docket No. 020296A

Claim 8 (Currently Amended) A semiconductor device comprising:

a single-crystal silicon substrate;

a first single-crystal oxide thin film having a sodium chloride structure formed ~~through epitaxial growth~~ on the single-crystal silicon substrate in an epitaxial relationship therewith;

a second single-crystal oxide thin film having a perovskite structure formed ~~through epitaxial growth~~ on the first single-crystal oxide thin film in an epitaxial relationship therewith; and

an amorphous layer formed between the single-crystal silicon substrate and the first single-crystal oxide thin film.

Claim 9 (Original) The semiconductor device as claimed in claim 8, wherein the first single-crystal oxide thin film is selected from the group consisting of MgO, CaO, SrO, and BaO.

Claim 10 (Original) The semiconductor device as claimed in claim 8, wherein the second single-crystal oxide thin film is selected from the group consisting of PbTiO₃, PbZrO₃, Pb(Zr, Ti)O₃, (Pb, La)(Zr, Ti)O₃, BaTiO₃, (Ba, Sr)TiO₃, and SrTiO₃.

Claim 11 (Withdrawn) A method of forming an epitaxial film, comprising the steps of:

forming a plume by irradiating a target containing a bivalent metal carbonate with a laser beam;

developing a bivalent metal oxide film from the bivalent metal carbonate through epitaxial growth on a single-crystal silicon substrate set in a passage of the plume; and

heating a surface of the target with an independent heat source different from the laser beam, thereby producing a single-crystal oxide epitaxial film.

Claim 12 (Withdrawn) The method as claimed in claim 11, wherein the step of heating the surface of the target is performed at the same time as the irradiation with the laser beam.

Claim 13 (Withdrawn) The method as claimed in claim 11, further comprising the step of heating the plume.

Claim 14 (Withdrawn) The method as claimed in claim 11, wherein the step of heating the surface of the target is performed prior to the irradiation with the laser beam.

Claim 15 (Withdrawn) The method as claimed in claim 11, wherein the step of heating the surface of the target is performed at such a temperature that the carbonate decomposes on the surface of the target.

Claim 16 (Withdrawn) The method as claimed in claim 11, further comprising the step of forming an oxide film having a perovskite structure through epitaxial growth on the single-crystal oxide epitaxial film by irradiating another target with a laser beam.

Claim 17 (Withdrawn) A laser ablation device comprising:

- a processing chamber that is exhausted by an exhausting system;
- a processed substrate that is held within the processing chamber;
- a target that is provided in the processing chamber and faces the processed substrate;
- an optical window that is provided in the processing chamber and corresponds to an optical path of the laser beam irradiating the target; and
- a heat source that is provided in the processing chamber and covers a space between the processed substrate and the target.